of instructions issued by insurance companies to their examiners and can be of no use to the student.

The chapter on X-ray diagnosis has been curtailed. In its present form, it seems much too optimistic and must certainly lead to a false conception of the ease and certainty of X-ray diagnosis in certain obscure troubles. To quote, under the heading "Stomach," we find the following paragraph: "The size, shape and position may be determined, and the degree of motility, together with the character of the peristaltic waves. Displacements are readily seen. The presence of atony, hypermotility, obstruction at the pylorus, infiltration or tumor of the stomach wall, and ulcer may be learned with accuracy." While these statements may possibly be true in a certain sense, the recognition of some of the conditions mentioned is attended with very decided difficulties and uncertainties.

The Wasserman hemolytic test for syphilis is explained and the modified Noguchi reaction described. In view of the inclusion of these facts in the book, it would seem proper to make mention of the newer test devised for the cerebrospinal fluid. The discussion of lumbar puncture and the examination of the fluid seems very meagre.

The sections on examination of the blood, sputum, stomach content, and feces while necessarily brief are yet good. When the subject of the urine is reached one is surprised to find the statement that the technic or urinalysis is omitted because of the wealth of special treatises on this subject. Why the same reasoning should not apply to the blood, sputum, etc., we fail to see.

The book as a whole makes a favorable impression. The student will get the most use out of the first part where the subject-matter of physical diagnosis is well presented. Illustrations are numerous and good. The frequent use of the nude female figure initiated in the first edition is continued and while undoubtedly of value from the commercial standpoint may find objections in the minds of some. H. W. A.

Further Advances In Physiology. Edited by Leonard Hall, M. B., F. R. S., pp. 440. London, Edward Arnold, and New York, Longmans, Green & Co. March 7, 1909.

In this praiseworthy book the results of recent work of physiologists are set forth in a digestible form so that the busy clinician may without much effort supplement his knowledge of physiology and bring it up to date. The book contains many advances in the subject, and the clinician who reads it with a mind alert for applications will find it most suggestive for progress in his own work, while for the rigid-minded physician it will diminish the tendency of wallowing in the slough of empiricism.

The nine chapters were written each by a different author and accepted by the editor without changes. Those that are especially good are the chapters on the cell, the cardiac cycle, the vascular system, and the functions of the cerebrum. In some of the chapters the authors were unmindful of the time of the reader in that they omitted summaries and conclusions and made it tedious to sift out the essentials. In reading it one must wade through many improved theories, histories of theories, wordy paragraphs and references for facts in order to obtain the isolated facts that are scattered through. The unessentials might well be printed in a different type or consigned to an asterisk system.

Chapter 1. Treats of cell biologically and gives its chemical composition in a simple and easily comprehended manner. A cell is not a fixed chemical compound, but its constituents are bound together by all degrees of affinity from chemical combination to absorption. Example of latter is oxyhemoglobin. The nature of affinity of cell for food, drugs, $C O_2$ and O and the processes of metabolism and other cell activities are described and also the action of balanced solutions.

Chapter 2. Contains a good description of bundle of His and of movements of heart. Artificial stimulus of a rapid rate causes a cardiac beat of a slower rate. There is no summation of stimuli in the heart and it can not be tetanized (bearing on cardiac massage). Heart has a tonicity and in life is never fully relaxed.

Chapter 3. Events of cardiac cycle and interpretations of tracings from arteries, veins, muscles (externally and intra-oesophageal), and ventricles are well treated. "C" wave of nervous pulse is caused by combination of arterial pulse and bulging of tricuspid valve in relative proportions in different cases. "V" wave is caused by both rush of blood filling auricle and end of ventricular systole and the raising of the "A V" ring at beginning of ventricular diastole.

Chapter 4. Tells of Carrel's work in vessel and organ transplantation. Gives blood pressure in many vessels and under many conditions. Arteries exposed to air and manipulated contract. Freezing prevents this. Hence bleeding after this anesthesia. Paradoxical pulse (i. e. fall of blood pressure on deep inspiration) is normal. Closing vessels of one lung usually causes no decrease in arterial pressure. Mental work and painful emotions send blood not to brain but to abdomen. Pleasurable ideas send it to periphery. Sedentary brain workers have stagnation of blood in abdomen and hence dyspepsia. Urine is not secreted by mechanical filtering, but the fluid part pervades the tubules by absorption and surface tension and concentrate waste products and extrude them in vacuoles into the lumen.

Chapter 5. Lung movements are well described and differently than in the textbooks. Apex moves very little and hardly at all in shallow breathing, and is therefore the seat of tuberculosis.

Chapter 6. Contains a wordy popular discussion on exercise and its effect on bodily functions but not much that is new.

Chapter 7. Brings physiology of nerves up to date with very little advance. Nerve fibres in cord do not regenerate, as neurolemma cells are necessary. Peripheral regeneration is almost surely a continuation of centra: fibers and these may branch.

Chapter 8. Is intensely interesting. Cortex may be divided according to some of its functions histologically by the relative development and time of appearance of the pyramidal cell layer. Thickness of this layer increases with the height in the scale of evolution, is great in the prefrontal region, is an index of degree of intelligence, and is shrunken in dementia. Granular layer (next internally) is for reception or immediate transformation of impressions from lower sensory neuroses and other parts of cortex. Polygonal cell layer governs instinctive actions. Region of broca is discarded and new areas of aphasia are given. Dual personalities, one-ideaed cranks, and certain dementias are explained.

Chapter 9. This is a long discussion of adaptation to light and theories of color vision, but is merely of scientific interest to the specialist. Conclusions are unsatisfactory. Eight pages of theories of color vision of the ancient Greeks seems out of place considering the title of the book. S. B.

BOOKS RECEIVED.

A Text-Book of Operative Surgery. Covering the Surgical Anatomy and Operative Technic Involved in the Operations of General Surgery. Written for Students and Practitioners. By